

N^o 20,295



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COMPLETE SPECIFICATION.

Improvements in and relating to Dental Chairs.

I, FRANK RITTER, of 563 and 565 North St. Paul Street, Rochester, Monroe County, State of New York, United States of America, Manufacturer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following
5 statement:—

The invention relates to dental chairs and has for its object to increase their stability, compactness, ease of operation and efficiency. The invention consists in the construction hereinafter described and pointed out.

In the accompanying drawings

10 Figure 1 is a vertical section of a chair-base, pedestal and seat-elevating mechanism;

Figure 2 is a section on line 2—2 of Fig. 1;

Figure 3 is a section on line 3—3 of Fig. 2;

Figure 4 is a partial plan of the seat frame and cross-bar;

15 Figures 5, 6 and 7 are sections on the lines 5—5, 6—6, and 7—7 respectively;

Figure 8 is a view of a detail.

Numeral 1 denotes the bottom, and 2 an approximately cylindrical body of a chair-base, said parts of the base being fixed to each other by screws 3.

4 denotes a lower part of a chair pedestal. This pedestal section has a closed
20 bottom and serves as an oil holder. 5 is an extension fixed to part 4 by screws 6.

The base section 2 and the pedestal section 4 are fastened in fixed relation to each other by a wedge-shaped block *a* operated by a foot bar *b* secured by a screw to the top of a short rod *c* having a screw thread connection with the block. The rod fits a socket in the end of the lever and is further fixed thereto by a transverse
25 pin *d*. In the walls of this socket on the underside are a series of slots *e* oppositely situated to fit over the pin and thus connect the rod and bar. These slots provide for different adjustments of the operating bar to compensate for wear. *f* is a guide for the rod *c*. *g* is a projection fixed to the pedestal and it also receives and guides the rod.

30 A slight movement of bar *b* raises or lowers the wedge-block either to tighten or loosen the connection between the base and pedestal. When the wedge is raised the shoulder *h* of the pedestal-projection is simultaneously forced down upon the edge of the base.

7 is a movable extension of the pedestal. 8 is a movable tube fixed to the
35 cross-bar 9 of the seat frame. The tube 8 and movable pedestal-extension 7 are elevated in usual manner by a pump and they are telescopically connected with each other and with the fixed pedestal section and these movable parts are guarded against independent lateral movements and against all binding action by rods 10 and 11. The rods are fixed in flanges or projections 12 and 13 formed on the
40 interior of the pedestal sections. The rods 10 each fit an opening in a flange or projection 10¹ on the seat tube 8 and the foot of said tube is accurately guided by the rods and held horizontally in fixed relation to the pedestal section 7.

[Price 8d.]

Ritter's Improvements in and relating to Dental Chairs.

The rods 11 in like manner fit suitable openings in the flanges or projections 11¹ on the foot of the pedestal section 7 and the foot of said section is guided by the said rods. These rods also obviate the use of keys and key way heretofore employed.

The seat tube is also guided and steadied by a frusto-conical split tube 14 5 which has a central opening receiving said tube. In the wall of the opening is a lubricating packing 15. The construction is such that the plug can be screwed up or down in its seat in the tube 7 to insure its fitting the seat tube suitably. The plug can also be removed to permit the introduction of the foot of the seat tube into the pedestal tube 7 in assembling the parts, or the seat tube 10 can be introduced from below without removing this plug.

16 denote sectional packing rings in the pedestal section and 18 are screws for setting them up against tube 7.

19 indicates a spring seated in a flange 10¹ and between it and a flange 12 to prevent jar when the seat ascends. 15

20 denotes a foot lever fixed to a short rod 21 by a pin 22. Said rod has bearings in the wings or projections 23 of the pedestal and constitutes the fulcrum of the pump lever. 24 is the short member of the lever having parallel arms 24¹ and 25 is a screw for fixing a sleeve 21¹ of said lever member to the rod 21. The lever is pivoted to the piston rod of a pump by means of a short rod 26. Returning 20 springs are denoted by 27. These are attached to the ends of rod 26 and to the fixed pedestal section.

28 denotes a projection upon the lever to arrest the same and stop the turning action of the springs whenever said projection engages the part 28¹ of the pedestal. 25

29 is a detachable cover fitting an opening 30 in the pedestal wall and held thereto by screws 31. The upper part of the cover or door 29 engages a flange or rib 32 at the top of the opening 30. This opening provides for inspection and repairs within the pedestal and reservoir. The cover excludes dust and maintains the symmetry of the pedestal. The fulcrum of the lever extends 30 outside the pedestal and fits bearings therein closely to avoid entrance of dust.

33 denotes a fixed piston tube. In order to provide space for the pump and other parts without enlarging the base and reservoir laterally and without interfering with the descent of the pedestal extension 7 the wall of said extension is inset at 34 and said inset portion cut off at its bottom as shown at 35. This 35 permits the foot of tube 7 to drop below the main part of the pump cylinder though the latter is situated partly within the circumference of the upper part of the tube. The cutting away of the inset at 35 provides that when the tubes are assembled the inset will not prevent turning the tubes and their flanges so that the openings in the latter may register. 40

The seat is raised by pumping oil into the tubes as usual. 36 denotes a valve which is opened to permit the oil to return to the reservoir and lower the seat. 37 are oil outlets and 38 is an oil escape passage whereby oil flows to the reservoir when the valve is raised. 39 is a valve-stem guide. 40 is a spring normally closing the valve and 41 a spring-compressing lever. 42 is a movable plug or 45 piston held loosely on the lever 41 by the spring. 43 is a screw plug to adjust the tension of the spring.

To enable the seat to be adjusted horizontally with respect to its support the seat tube 8 is fastened to the cross bar by a nut 44 screwing upon the tube and forcing the shoulder 45 and bar toward each other whereby the bar is held between 50 said nut and shoulder until the nut is loosened whereupon the seat frame can be independently rotated.

46 indicates the platform extension of the seat frame and 47 is a child's foot rest folded back in inoperative situation in a recess 48.

One of the main objects of the invention is to provide that the above described 55 telescoping parts shall move smoothly and without wobbling or binding. For this a plurality of guide rods constructed and arranged as specified is very

Ritter's Improvements in and relating to Dental Chairs.

efficient. Three rods for each movable part arranged circumferentially as shown are very suitable though the improvement is not limited to the particular number. As the movable sections descend at times into the oil holder they and their connections are thereby constantly lubricated.

5 The accessibility and detachability of the various parts are desirable and novel features of construction are employed.

The space occupied and the danger of breaking in transportation is thereby diminished as also is the cost of repairs. The accessibility of the pump and its operating devices is a practically important feature. The described construction
10 whereby these and other advantages are secured are hereinafter pointed out and the best forms and arrangements known to me have been set forth but variations that involve simple mechanical skill and that have the same principles of construction and operation are not excluded.

Having now particularly described and ascertained the nature of my inven-
15 tion and in what manner the same is to be performed, I declare that what I claim is:

1. In a dental chair the combination of telescoping tubes, guide rods fixed between the tubes and tube flanges provided with openings to receive and fit the rods, whereby the tubes are guided and steadied and whereby independent rotation
20 is obviated, substantially as described.

2. In a dental chair the combination of telescoping tubes, guide rods fixed to flanges in the movable and fixed pedestal sections and situated interiorly thereof and exterior tube flanges provided with openings to receive and fit the rods, substantially as described.

25 3. In combination with the elevating mechanism, the telescoping tube 7 having an exterior flange 11¹ and an interior flange 12, a guide rod, fixed in one of the flanges, and a guide rod movable through the other, substantially as described.

4. In a dental chair the combination of telescoping tubes having flanges and guide rods and a spring situated between the flanges to prevent jar, substantially
30 as described.

5. In a dental chair the combination of the oil tank, the telescoping pedestal sections and the guide rods, said rods and sections being adapted to be lubricated by descent into the tank, substantially as described.

6. In a dental chair the combination of the base, the pedestal rotatably sup-
35 ported on said base, the wedge-block situated between the pedestal and base, and block-moving devices to crowd said block against their walls, substantially as described.

7. In a dental chair the combination of the base, the pedestal rotatably supported on said base, the edge-block situated between the pedestal and base,
40 and block-moving devices to crowd said block against their walls, said devices consisting of a screw, a detachable screw turning bar and means for adjusting the bar with respect to the screw, substantially as described.

8. In a dental chair, a pedestal having an opening or doorway and a cover or door to close the same substantially as described.

45 9. In a dental chair a pedestal having an opening or doorway and a cover or door 29 said cover being detachably secured to the pedestal and engaging under a rib 32 thereof, substantially as described.

10. In a dental chair the combination of an oil holder, a pedestal section adapted to be moved into the holder, a piston tube 33, and a pump, said pedestal
50 section having an inset part 34 to permit it to descend beside the pump, substantially as described.

11. In a dental chair the combination of an oil holder, a pedestal section adapted to be moved into the holder, a piston tube 33, and a pump, said pedestal section having an inset part 34 to permit it to descend beside the pump,
55 tube 7 having flanges 12, the tube 8 having flanges 10¹, said inset being cut away

Ritter's Improvements in and relating to Dental Chairs.

at 35 to permit the tube 8 to be rotated within tube 7 to cause said flanges to register in assembling the parts, substantially as described.

12. In a dental chair the combination of the pedestal, the pump, the lever-member 20 fixed to the fulcrum 21 at the exterior of the pedestal, said fulcrum consisting of a rod pivoted in the pedestal wall, the short lever-member consisting 5 of a sleeve secured to the rod and provided with arms, a second rod extending through said arms, a piston-connecting-rod loosely joined to the said second named rod, and returning springs attached to the latter rod outside its bearings in the arms, substantially as described.

13. In a dental chair the combination of a pedestal having a door opening, a 10 lever having its fulcrum situated in the opening and bearing in the pedestal wall, lever-returning springs and a projection 28 arranged to engage the pedestal and arrest the action of the springs substantially as described.

14. In a dental chair the combination of the telescoping pedestal sections and the sectional ring 16 provided with screws for setting the ring against the inner 15 pedestal section, substantially as described.

15. In a dental chair the combination of the seat tube, the pedestal and the frusto-conical split plug to adjust the bearing connection of said tube and pedestal, substantially as described.

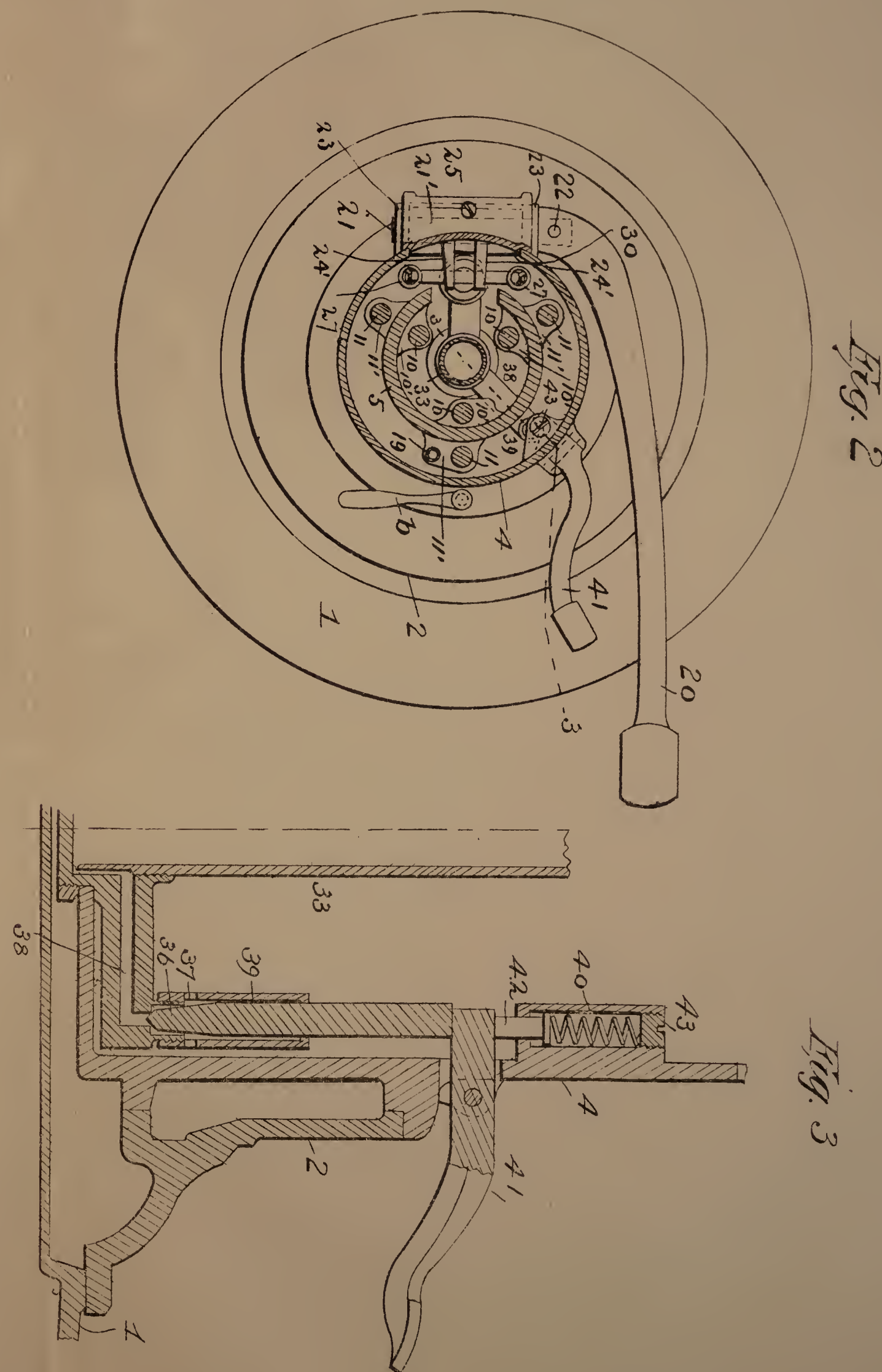
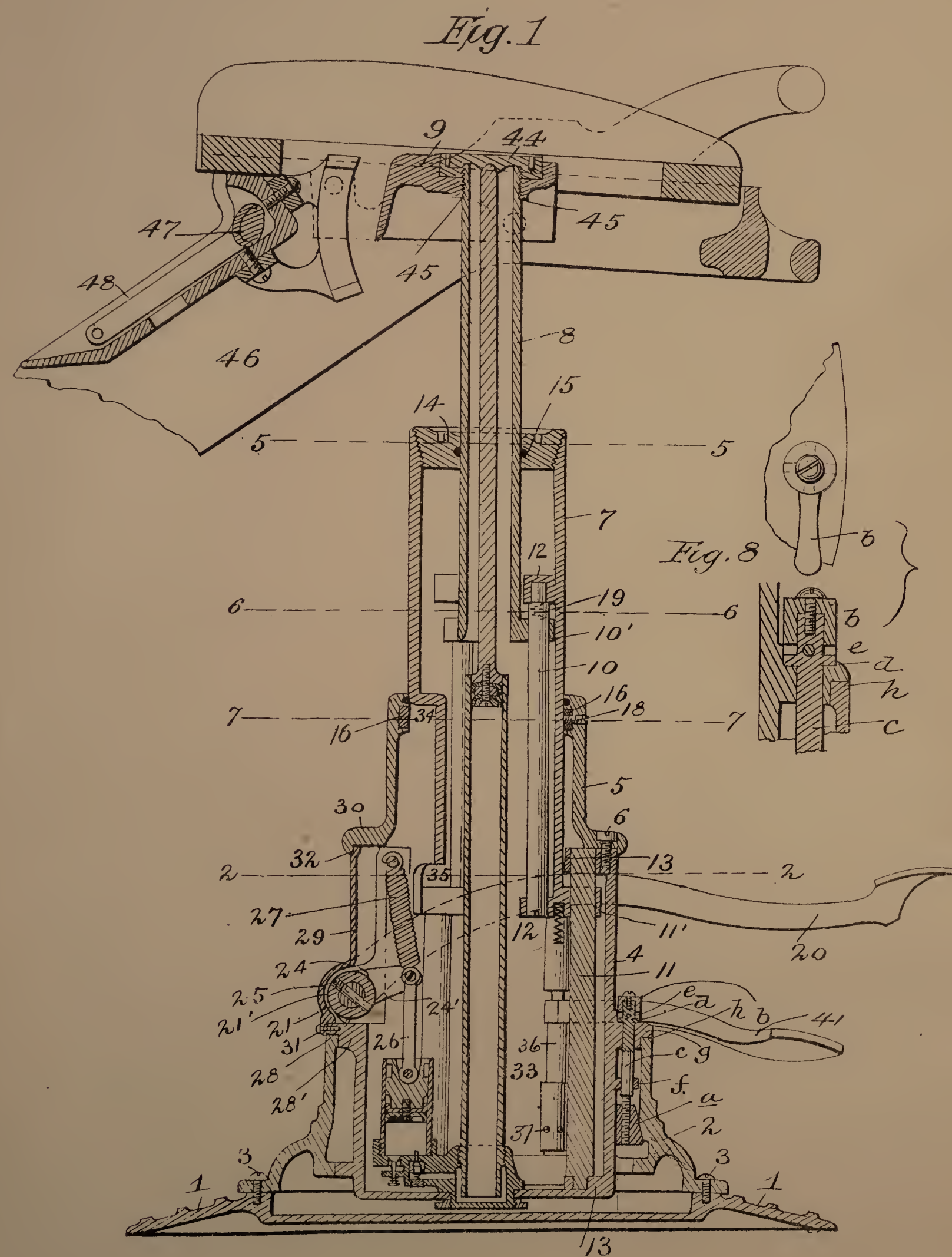
16. In a dental chair the combination of the cross-bar of the seat frame, the 20 seat tube provided with a shoulder, and a nut engaging the tube above the shoulder to fasten the bar on the tube, substantially as described.

Dated this Third day of September 1897.

CHARLES JUNGE,
Agent for the Applicant. 25

Redhill : Printed for Her Majesty's Stationery Office, by Malcomson & Co., Ltd.—1897.





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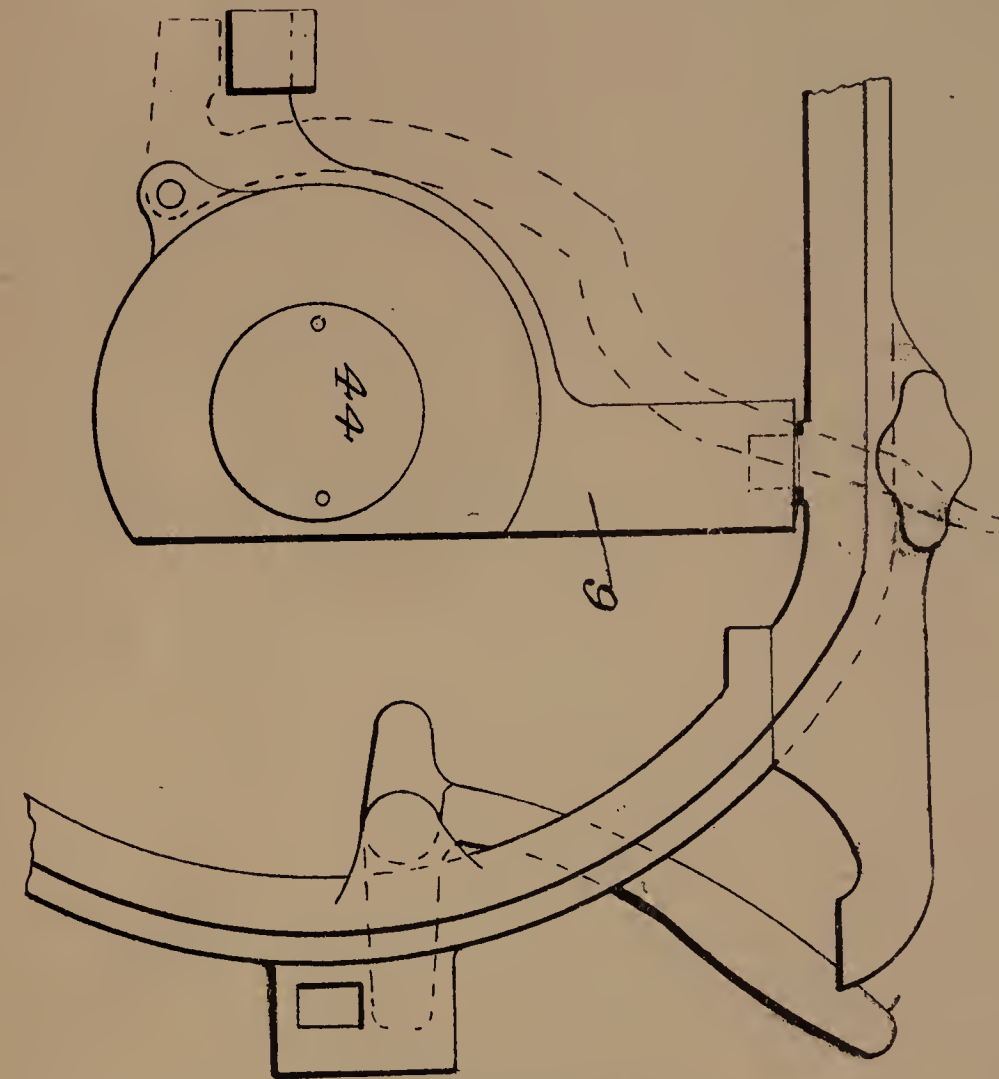


Fig. 4.

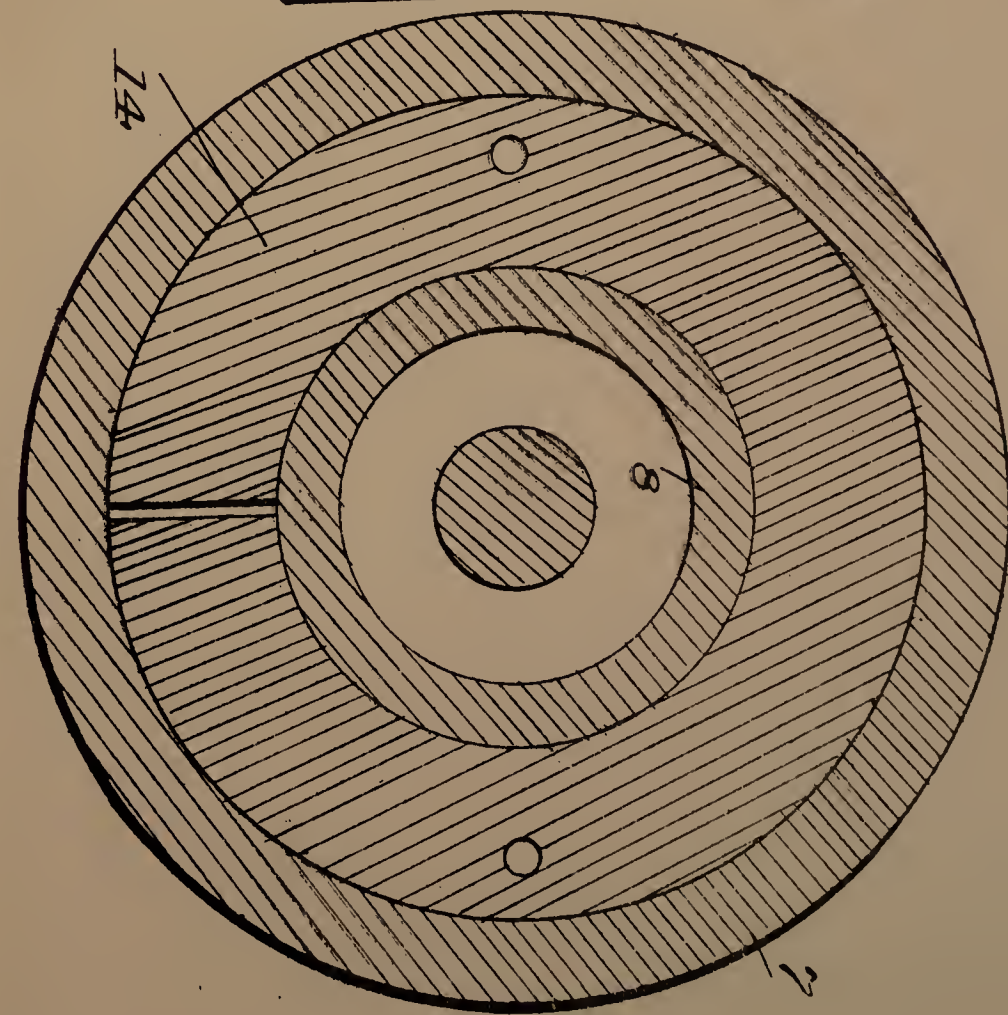


Fig. 5.

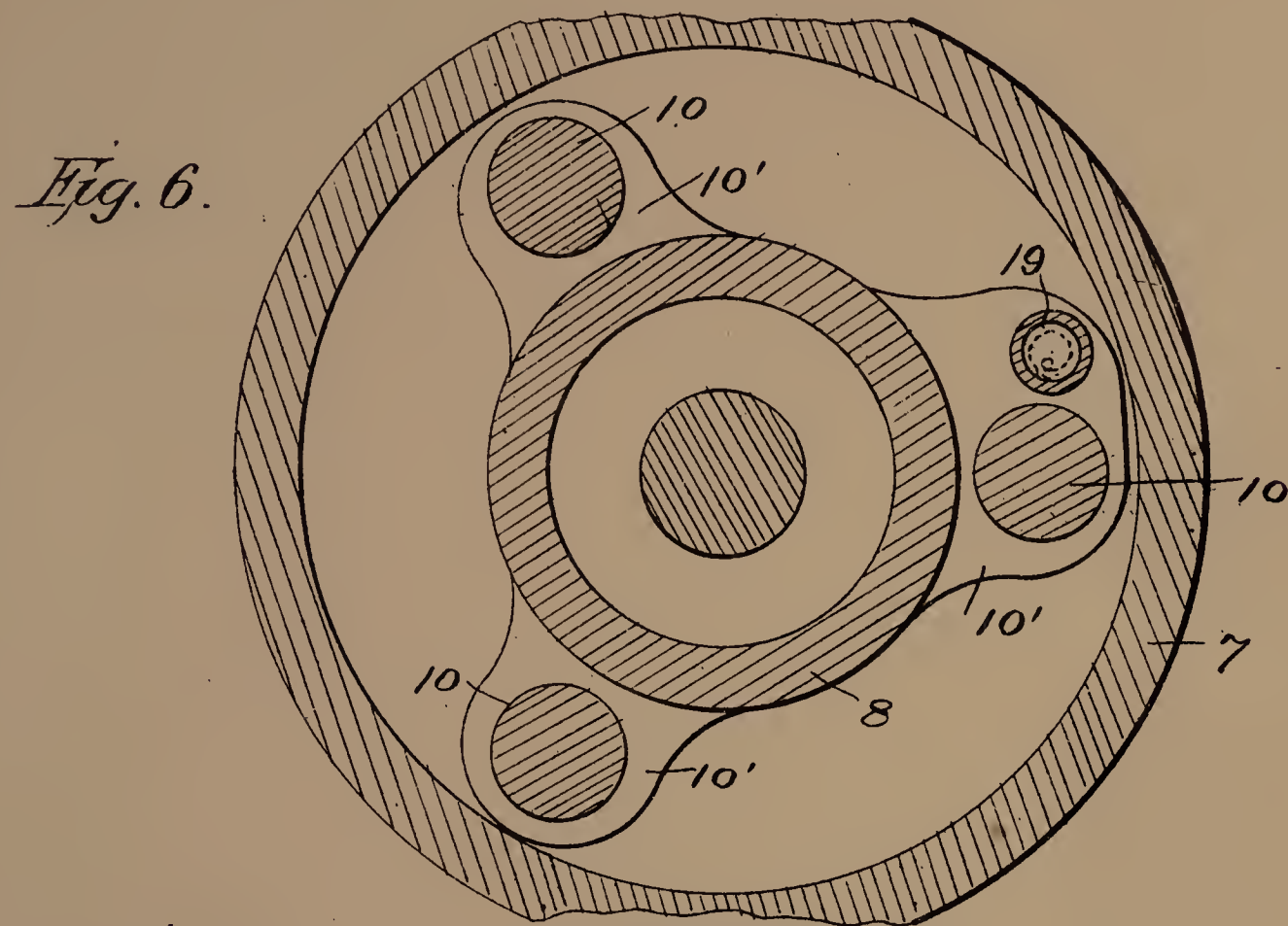


Fig. 6.

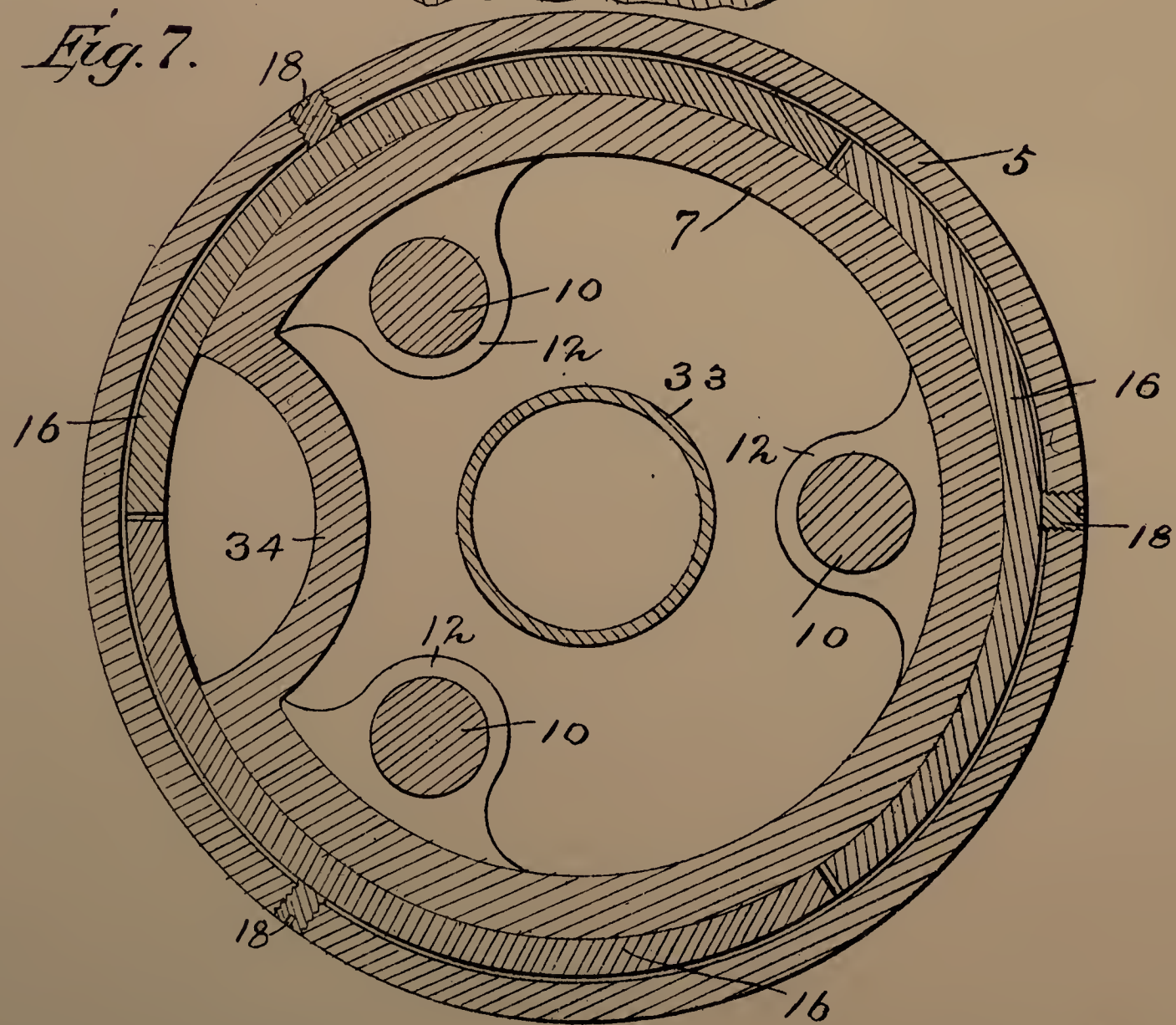


Fig. 7.

